DOCUMENT RESUME

ED 119 064 CG 010 370

AUTHOR Meichenbaum, Donald, Ed.
TITLE Cognitive-Behavior Modification: Newsletter. Number 1, April, 1975.
PUB DATE Apr 75
NOTE 25p.; Not available in hard copy due to small print size of original document

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS *Behavioral Counseling; *Behavior Change; *Cognitive Objectives; Cognitive Processes; Counseling; *Newsletters; Research; *Therapy
IDENTIFIERS *Cognitive Behavior Modification

ABSTRACT

In recent years there has been an increasing interest in the role of cognitive factors in behavior modification. In order both to nurture this development and influence the dialogue between semantic-cognitive therapists and behavior therapists, a newsletter was begun. The newsletter, which will appear annually, summarizes ongoing research projects throughout the world which are concerned with cognitive-behavior modification. Included in the newsletter are project descriptions, researchers' addresses, materials available, and a potpourri of related matters. The material covered includes work arising from many different theoretical persuasions. It should be especially valuable to anyone concerned with the role of cognitive factors in the behavioral change process. (Author)

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COGNITIVE-BEHAVIOR MODIFICATION

NEWSLETTER

Number 1
April, 1975

Donald Meichenbaum
University of Waterloo

belief system expectancy problem solving cs arbitrary inference unc onscious self-perception discriminat ive stimuli strategy irrational thinking coverant self-instructions primary process appraisal dichotomous rea soning awareness engrams manife st content personal constructs ucs cognitive style fantasy personal ca usation attitudes dreams negative self-statements images interpreta tion response chain focusing auto matic thoughts black box reflectiv ity rules intellect subvocal speech set attribution private speech in tention ass[illegible]orld reason paradigm s[illegible] impression undulations [illegible]ex anticipat ion associat[illegible]iediation val ues ghosts [illegible]ns cues co nations real[illegible] implicit be havior aim ideomotor action fores ight schema personal fable insight

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BY WAY OF INTRODUCTION

Something important is happening to behavior therapy! Behavior therapy, as psychology in general, is going cognitive. What our client says to himself (that is, his appraisals, attributions, self-evaluations), or the self-statements and images which he emits prior to, accompanying, and following his overt behavior are becoming an increasingly important area for therapeutic intervention.

A second major change in behavior therapy is that the conceptual basis of "learning theories", which provided the framework and heuristic background for a variety of procedures, is being challenged on both theoretical and empirical grounds. Such time-honored concepts as the automaticity of reinforcement and the continuity assumption between overt and covert events are being seriously questioned. Now, such factors as how the client perceives the reinforcement, or what he says to himself about the treatment regimen seem to influence the outcome.

The questioning of the adequacy of "learning theories" and the introduction of cognitive factors have contributed to still another change in behavior therapy. As Mahoney (1974) indicated, behavior therapy is shifting in emphasis from a focus on discrete, situation-specific responses and problem-specific procedures to a coping skills model, which can be applied across situations and problems.

I feel that these changes are both healthy and long overdue. In order to nurture and reinforce them I have decided to put out a newsletter summarizing people's efforts in this area. The newsletter's goal is to facilitate communication about cognitive-behavior modification (CBM) among research-practitioners.

In the same way that psychologists have been seduced into arguing the either-or position of heredity versus environment, trait versus situation, we have been seduced into arguing behavioral versus cognitive change (one could add "affective" change as well). Rather, it seems our job is to find out how cognitive and behavioral processes interact leading to change. Elsewhere I have argued (Meichenbaum 1975a) that perhaps it is time to consider changing the title of our approach and the journal from Behavior Therapy to Cognitive-Behavior Therapy, with most emphasis on the hyphen.

This newsletter is designed to engender a dialogue between researchers who are searching to understand the psychological processes that underlie the hyphen. A somewhat illegitimately conceived marriage is proposed between the clinical concerns of semantic therapists (as widely diverse as Aaron Beck, Albert Ellis, Jerome Frank, George Kelly, Jerome L. Singer) and the technology of behavior therapy. I can assure you that such a marriage will cause both "bed partners" to talk to themselves, if not to each other. The purpose of this newsletter is to influence that dialogue.

The newsletter will emphasize that at present we have a variety of ways to view our client's cognitions, and that furthermore, we do not have sufficient evidence available to determine which way will prove most valuable either heuristically, or in terms of its efficacy. The "uniformity myth" that Kiesler (1966) described as applying to psychotherapy can no longer be applied to semantic and cognitive therapies. We can view our client's cognitions as behaviors per se, as automatic thoughts and thus part of the response chain, as reflections of cognitive styles and faulty belief systems, as inadequate problem-solving and coping skills, or as defense mechanisms, etc. Indeed, our task may be to match the most useful conceptualization and treatment regimen with each client's specific problems and goals of treatment (i.e., an adaptive treatment approach of "different strokes for different folks").

Thus, the cognitive-behavior modifier has a host of different ways to view his client's cognitions, and each leads to a somewhat different mode of treatment intervention. This newsletter will summarize these various treatment and research efforts. It is not clear how often the newsletter will appear. My present hope is once and perhaps twice a year. It depends on the readers' reactions and contributions.

For this first newsletter I have taken the liberty of using my own personal correspondence file of investigators who are studying CBM processes. Over the last few years this file has been growing at a rapid pace, and I therefore felt it would be worthwhile to put these various investigators in touch with each other. Ergo, the newsletter! This initial issue represents only direct contacts I have had and does not attempt to be a complete list or

bibliography of people working in the area of CBM. I hope that I have not offended anyone by including him or omitting him from the newsletter. My primary intent is to further engender an atmosphere for and communication about the role of cognitive factors in the change process. Hopefully, researchers and practitioners will use this newsletter as an outlet to communicate about ongoing projects. Besides research summaries and accompanying addresses of the researchers, the newsletter will include a listing of related articles and books, notices of meetings, and a brief presentation of the more salient, researchable questions that I feel need investigation.

Let me close this introduction by inviting your contributions and reactions. What research on CBM are you involved in? What issues do you think should be examined? What have you read that others should know about? How have you employed CBM procedures with patients? Most importantly, where have the procedures failed as well as succeeded?

CLIENT'S COGNITIONS AS REFLECTIONS OF IRRATIONAL BELIEF SYSTEMS

> The only feature common to all mental disorders is the loss of common sense (sensus communis) and the compensatory development of a unique private sense (sensus privatus) of reasoning.
>
> Immanuel Kant

It is now some 20 years since Albert Ellis first introduced rational-emotive therapy. Indeed, there are plans for Ellis and RET therapists to hold a conference from June 6 to 8 at Lewis University School of Law in Glenn Ellyn, Illinois. Since its introduction RET has attracted a number of admirers, supporters, and most recently, an increasing number of researchers. The research efforts have followed three general lines. The first examined the effects of cognitive events on physiological responses, affective experience, and behavior (e.g., see Russell & Bradsma, 1974). A second research approach has attempted to measure irrational beliefs and relate them to clinical populations. The third research approach is concerned with examining the relative efficacy of the RET approach as a therapeutic device with clinical populations, and recently, as a prophylactic device with school children. Mahoney (1974) has reviewed the RET therapy literature and has concluded--and my own assessment of the literature is in full accord, "The clinical efficacy of Ellis' rational-emotive therapy has yet to be adequately demonstrated" (p. 182). Attempts are actively underway to collect more data. Some recent notable efforts include Diloreto (1971), Goldfried et al. (1974), Meichenbaum et al. (1971), Thorpe (1973), Trexler and Karst (1974), and Straatmeyer (1974). However, the purpose here is not to present a literature review, but rather to highlight researchable questions and facilitate communication.

A careful examination of these various studies indicates the variety of different ways RET has been conducted. For example, compare the therapist manuals in Diloreto, Thorpe, and Meichenbaum (1974a) studies. To emphasize the point that the uniformity myth can no longer apply to RET, conjure up the image of Carl Rogers, as compared to Albert Ellis, conducting RET therapy. The cognitive restructuring therapy approaches seem to vary most notably in the relative emphasis they place on formal logical analysis (i.e., isolation and evaluation of premises), the directiveness with which the therapy rationale and procedures are presented, and the adjunctive use of behavior therapy procedures (Mahoney, 1974). Research is needed to determine the significance of such differences.

WHO

(that is, according to my correspondence file) Investigators' complete addresses are listed at the end of the newsletter.

WHO'S DOING WHAT

Whereas the target behavior of the late 1950's and 1960's seemed to be mainly avoidance behavior of various animals (e.g., snakes, spiders, etc.), the target behavior of the late 1960's and 1970's seems to be unassertiveness. The general research strategy is to compare a cognitive structuring treatment approach such as RET, with a behavioral rehearsal-modeling procedure.

Geoffrey Thorpe (Rochdale, England) has conducted a dissertation while at Rutgers on the comparative effectiveness of desensitization, modeling and behavioral rehearsal, and rational-emotive-based self-instructional training with unassertive college students. The self-instruction training did quite well relative to the other groups, and the thesis, especially the manual, is worth examination. Thorpe and colleagues are presently applying the self-instructional treatment procedures, as well as a stress-inoculation-treatment approach, which will be described below, to hospitalized patients. The need to examine such cognitively based therapy approaches with clinical populations is obvious.

Phyllis Shaw (Univ. Oxford, England) has reported on a series of studies comparing flooding with desensitization in the treatment of phobics. She reports that low arousal flooding "which amounted to coping instructions, was more effective than high arousal flooding". Her research program seems to be focusing on cognitive elements in phobias, directing these and providing persuasive coping messages.

Marvin Goldfried (Stoney Brook) is a most active investigator in the area of CBM. He has recently interpreted RET within a learning framework (Goldfried et al. 1974) and has written a chapter on problem-solving approaches to therapy for a forthcoming volume edited by Kanfer and Goldstein (1975). In collaboration with Marsha Linehan (Catholic Univ.) he is examining the efficacy of RET with female, unassertive college students.

Janet Wolfe (Inst. Rational Psychotherapy, N.Y.) has conducted a thesis at NYU on the effects of modeling-behavioral rehearsal vs. modeling-behavioral rehearsal plus rational therapy in fostering assertive behavior in women. A placebo and no treatment group were also included. The two main treatment groups were found equally effective in fostering assertiveness.

Iris Fodor (NYU) and Pat Spector-Jaborwoski (Dept. of Behav. Studies, St. Louis, Missouri) are also investigating the role of cognitive factors in unassertive behavior.

William Fremouw (Univ. Mass.), in his doctoral dessertation trained speech-anxious college students in relaxing, coping self-statements (i.e., eliminating negative, and increasing positive self-statements) and in role playing. These Ss were then called helpers and they each trained another speech-anxious S, the helpee, in the same technique. Both the helper and helpee showed significant improvement in speech anxiety over control groups, and most interestingly, over a trained group which did not have an opportunity to provide help. The promise of using clients as well as paraprofessionals to train other clients in CBM procedures is most exciting.

Geoffrey Yager (Univ. North Dakota) is exploring the use of a self-instructional modeling training approach to teach empathy skills, as well as conducting research on covert conditioning processes. Ochiltree, Yager and Prekke (1975) reported that a cognitive, self-instructional method caused significantly more gain in their empathy ratings than did a Carkhuff training method. The Carkhuff method included didactic teaching, discrimination training, modeling, experientially oriented communications, practice, and feedback. The self-instructional modeling approach included each of these components plus the behavioral rehearsal of the thought processes leading to an effective empathy response. A number of self-verbalizations were modeled and then rehearsed, initially aloud and then covertly. For example, subjects were taught to emit such self-statements as (1) What has the helpee verbally and nonverbally expressed about his feelings? (2) How would I feel if I were

the helpee? (3) Can I "pat myself on the back" for anything I've actually said or for anything I have learned about the helpee? The authors suggest that a CBM approach including coping models could be used for counselor training. This study bears replication and extension.

John Gottman (Indiana Univ.) and his students have conducted some of the most worthwhile studies on unassertive behavior. Their research indicates the appropriateness of a CBM approach for unassertive behavior. Schwartz and Gottman (1974) performed a task analysis of unassertive behavior in college students and found that a major factor was the nature of their internal dialogue. Low assertive Ss emitted more negative and fewer positive self-statements than did high assertive Ss. Interestingly, low assertive Ss did not differ from their more outgoing counterparts in their knowledge of what was an appropriate assertive response, nor in the emission of such assertive responses under a "safe" hypothetical role playing situation. Therefore, appropriate interpersonal behaviors and the knowledge of their adequacy were in the low assertive Ss' repertoires. Poor performance was a reflection of an internal dialogue of conflict. This was determined by having Ss fill out a 34-item questionnaire, Assertive Self-Statement Test (ASST), following a role playing assessment. The ASST asked Ss to indicate how frequently they emitted each of a variety of negative and positive self-statements.

Carol Glass (1974) and Steve Shmurak (1974) have conducted Ph.D. theses at Indiana Univ. on the modification of the internal dialogue of unassertive college students. A coach described a situation, then modeled negative thoughts he might experience in such situations followed by coping and self-reinforcing self-statements. See in particular their therapist manuals.

Beverly Dodge (Univ. Texas) is using a cognitive coping modeling approach to treat adults who have dating and interpersonal problems.

Recently Gottman et al. (1974) have applied such cognitive procedures to socially withdrawn children. See their coach's manual. The need to attend to the internal dialogue (self-statements and images) of such withdrawn children was indicated by work conducted by Meijers.

Joop Meijers (Amsterdam, Netherlands) used a TAT-like assessment approach of showing slides of various interpersonal scenes of children to examine the appraisal and attributional style of socially withdrawn and socially outgoing children, as identified by sociometric measures. By asking his Ss what was happening, as well as what the children in the slides were feeling and thinking, Meijers was able to tap their cognitive styles. His results seem to be consistent with Gottman's finding that an internal dialogue of conflict and negative self-statements characterize withdrawn children.

Joseph Sheare (Penn. State) is treating children with poor self-concepts and low self-esteem by means of CBM. Once self-concept is viewed as a reflection of an internal dialogue, a number of treatment possibilities are offered.

Dave Henshaw and Don Meichenbaum (Univ. Waterloo) have developed a scale, similar to Gottman's ASST, to assess self-statements and images Ss have during problem-solving situations on creativity tests. The need to develop assessment instruments to tap client's internal dialogue is apparent. Meichenbaum (1975b) has described the assessment procedures which can be employed in a CBM approach.

It is likely that a number of theses and studies will be conducted on the treatment of unassertive behavior. More research is needed on a task analysis of interpersonal assertion. The Schwartz and Gottman study needs replication with clinical populations and socially withdrawn children. New ways to tap the client's internal dialogue need to be developed. Some good "engineering" is required to combine cognitive elements with behavioral rehearsal and modeling procedures. Should the cognitive therapy focus on specific negative and coping self-statements or underlying irrational premises or on problem-solving skills? We need comparisons of specific cognitive procedures!

One of the most exciting directions of the RET approach is its extension into the classroom. A number of people are coming out with affective education "packages". For example, William Knaus (Inst. Rational Psychotherapy, N.Y.) has prepared a manual for elementary school teachers on RET education. Maxie Maultsby (Univ. Kentucky, Lexington) has developed a

package called Rational Self-counseling and David Goodman (1974) in collaboration with Maultsby has offered a rational behavior training educational approach. Two comments here!

Such programs may be useful and they deserve careful research attention and assessment, including observational studies. I am concerned that such RET packages will go the same route as other classroom packaged "panaceas".

Secondly, the cognitive elements of the RET package should be combined with behavioral training. I am reminded of a visit I had to Ellis' "living school", where children were receiving RET training. The children seemed fairly efficient in conducting an ABC rational analysis (a la Ellis) of their affective disturbance, but the necessary behavioral skills required to act differently were not emphasized. Not only must one recognize maladaptive behaviors, thoughts, and feelings, but this recognition must act as a cue to talk to oneself differently about such behaviors. This altered internal dialogue then becomes the occasion for producing adaptive behaviors. Meichenbaum (1975a) has described this change process.

After 20 years, RET seems to be in its "infancy" with regard to assessment, and research. But it is a very active infancy. In fact, some of the basic assumptions underlying the RET approach need study. For example, Meichenbaum (1975c) has suggested that it may not be the incidence of irrational beliefs per se which is the distinguishing characteristic between normal and abnormal populations as Ellis suggests. That is, nonclinical populations may also emit many of the irrational premises that characterize clinical populations. Instead it may be what the nonclinical subjects say to themselves about the irrational beliefs, the coping mechanisms they employ that may be a distinguishing variable. It may not be the absence of irrational thoughts per se, but rather the set of management techniques employed to cope with such thoughts and feelings that characterizes the nonpatient population. The nonpatient may be more capable of compartmentalizing such events, and able to use such techniques as humour, rationality, "creative repression" or on occasion he may just enjoy the hedonic value of such human vagaries. In contrast, the patient's problem is what he is saying, doing, or failing to say or do when he experiences such states. If this hypothesis is valid, then we should be studying not only the incidence of irrational beliefs, but what Ss say to themselves about having such beliefs.

CLIENT'S COGNITIONS AS REFLECTIONS OF PROBLEM-SOLVING AND COPING SKILLS

> Reason does not function automatically; the exercise of man's rational faculty is volitional.
>
> Ayn Rand

Meichenbaum (1974b) offered a skills-oriented, stress-inoculation-training procedure as a useful way of conducting CBM. The stress-inoculation program included an educational phase, in order to provide the client with a conceptualization of his problem; an acquisition phase, during which a number of behavioral and cognitive skills were taught to the client, in a "cafeteria style" so that he could select those techniques which worked best for him; and finally, a rehearsal phase, during which clients could try on their coping skills with real and/or imagined stressors. The procedure was initially developed for the treatment of multiphobic and interpersonally anxious clients. Many investigators have conducted research on the stress inoculation procedure(Blankstein (1972), Fedoravicius (1971), Meichenbaum and Cameron (1973a), Williamson (1973)). Recently, it has been extended in a most significant way by Novaco, for the treatment of clients who have problems with anger, and by Turk, for the treatment of experimentally induced pain.

WHO

Ray Novaco (Univ. Calif., Irvine) conducted a very impressive dessertation at Indiana University on a stress-inoculation treatment of anger. The treatment for adult volunteers from the community included having them appreciate the role that anger-engendering self-statements and arousal play in producing anger. The clients were trained to use relaxation to control their arousal and were given self-instructional training to control their

cognitions. In order to change how the clients viewed angry situations (namely, a shift from a personal threat to a task orientation), their anger was conceptualized as consisting of several stages, viz., preparing for a provocation, confronting the provocation, coping with arousal and agitation, self-reward. The clients imagined themselves in angry situations and saw themselves using the coping procedures to handle their anger. A similar conceptualization had been offered to phobics in the Meichenbaum and Cameron study (1973a).

Novaco compared various treatment groups: relaxation alone, self-instruction alone, relaxation plus self-instruction, and control groups. The combined group was most effective in reducing anger, although the differences between the combined and only self-instruction groups often did not reach significance. The relaxation alone group was less effective. This is an important study that indicates the potential of a stress-inoculation treatment approach. Many research questions are raised. The study cries out for replication, perhaps with adolescents and children who have problems with agression.

Dennis Turk (Univ. Waterloo) has employed a stress-inoculation-treatment approach to treat Ss who received experimentally induced ischemic pain produced by means of an inflated arm cuff. The stress-inoculation included a conceptualization of pain in terms of Melzack's (1973) gate-control theory of pain. The acquisition phase included relaxation and self-instructional training as well as six different imagery training procedures. The rehearsal phase included imagining receiving pain and then employing the coping procedures, as well as role playing. The stress inoculation treatment procedure, relative to a practice placebo control group, proved most successful. Research is underway to apply the treatment approach to "real" pain patients. The stress-inoculation package is being beefed up to include modeling films and experience with actual painful stressors. The role of cognitive factors in the experience of pain, anger, and anxiety has been reviewed by Meichenbaum and Turk (1975).

Ted Barber (Medfield, Mass.) and Fred Kanfer (Univ. Illinois, Champaign) are two other investigators who have examined the role of cognitive processes in pain tolerance. Both have highlighted the value of cognitive strategies in handling pain. A difference between their approach and stress-inoculation is that they usually select a particular strategy and ask all Ss to then employ it. In contrast, stress-inoculation is most sensitive to individual differences and makes the S a collaborator, asking him to select from an array, the strategies that work best for him. Research is needed to assess the relative efficacy of these two approaches.

John Lick (SUNY, Buffalo) is doing a component analysis of stress inoculation procedures with public speech anxiety.

John Reeves (Dalhousie, Nova Scotia) has applied a cognitive-skills-training approach in combination with EMG-biofeedback in a case study of treatment of tension headache. He demonstrated how cognitive restucturing can be combined with biofeedback. Meichenbaum (1975d) has examined the role of cognitive factors in biofeedback treatment. At each phase of biofeedback treatment the client's cognitive processes come into play. The biofeedback therapist must be as concerned with what his clients say to themselves about his physiological arousal, as he is with the physiological arousal per se.

Irving Janis (Yale Univ.), in collaboration with Langer and Wolfer, have indicated the value of a cognitive restructuring approach in teaching coping skills to hospitalized patients. By altering how the clients' viewed their surgery and accompanying feelings and thoughts, and by manipulating information provided to patients, they significantly affected the patients' adjustment, as measured by nurses reports and medication required.

David Vernon (Univ. Missouri Med. School) is exploring the use of an informational approach to patients undergoing painful diagnostic and surgical procedures. In most such studies the information is usually limited to what will happen, and little or no focus is placed on information concerning the feelings and thoughts the patient may experience and the ways he may cope with these. The content of the information in such studies has been quite limited. Vernon is exploring the contribution of a coping-skills-informational approach.

Donald Freeman (Memorial Univ., St. Johns, Newfoundland) is exploring the use of stress-inoculation treatment with patients awaiting elective surgery.

Barbara Melamed (Carnegie-Mellon) has applied a coping-modeling approach to children who are about to experience the stress of hospitalization and dental visits. The available research suggests that a coping model procedure (namely, the model's demonstrating faultering behaviors, anxiety, etc., then coping and eventually becoming a mastery model) is more effective than a mastering model. (See Meichenbaum (1975c) for a review of this research.)

Ernest Poser (McGill Univ.) is examining what he calls a CS pre-exposure procedure with children. He has examined the use of coping modeling films with children prior to exposure to a dentist. Like the stress-inoculation procedure, the CS preexposure procedure is seen as having a great deal of promise as a prophylactic procedure. Indeed there is a real need to conduct a study on the use of stress-inoculation training with a high risk population or with a population about to experience stress (e.g., sky-divers, soldiers, policemen). What is the nature of the stress such Ss are likely to experience? What specific coping skills should such Ss employ? It is suggested that the answer to such questions will lead to a stress-inoculation training approach.

Michael Girodo (Univ. Ottawa, Ottawa), and his students Douglas Wood and Steve Stein are other investigators involved in stress-inoculation treatment. Stein is examining the effects of stress inoculation with laboratory-based stressors such as R. Lazarus' stress films. Different coping self-statements are included as part of the accompanying sound track in order to determine their differential effects upon physiological and behavioral measures.

Manual Zane's (NYC) work on the role of cognitive factors in treatment of phobics is also quite helpful in developing cognitive coping treatment packages.

As with the RET procedures, much work is needed before any conclusions can be drawn about the usefulness of stress-inoculation training. The initial results are most encouraging, but one is reminded of Shapiro's (1960) article on the history of the placebo effect. Perhaps we should view such placebo and expectancy effects as the content of the client's internal dialogue, thus as researchable as other components of the treatment. Indeed, Meichenbaum (1975a) has argued that the initial, conceptualization phase of therapy should be considered an active ingredient in therapy. We should be concerned with what goes on in therapy prior to the implementation of a specific procedure.

CLIENT'S COGNITIONS AS REFLECTIONS OF FAULTY THINKING STYLES

> It is very obvious that we are influenced not by "facts" but by our interpretation of facts.
>
> Alfred Adler

So far we have examined the use of our client's cognitions as reflections of irrational belief systems and as specific problem-solving and coping mechanisms that the client can employ to handle stressors. An important alternative is to view our client's cognitions as faulty thinking styles.

WHO

Aaron Beck's (Philadelphia General Hospital) work has been most valuable in helping us conceptualize our client's thinking disorders in terms of arbitrary inference, magnification, overgeneralization, etc. Beck has indicated in a personal communication that he has found the client's "automatic thoughts" more valuable to explore and change than the cognitive stylistic elements of dichotomous reasoning, etc. Beck (1963) indicated the need for research to examine the characteristics of automatic thoughts along dimensions such as arousal, salience, imperativeness, plausibility and their involuntary quality. Much research is needed on how best to conceptualize our client's cognitions.

Beck is a leader in the area of CBM. Of particular interest may be an interview format he has developed to assess the cognitions and images that precede, accompany, and follow the client's maladaptive behaviors. He has also written, with Ruth Greenburg, a pamphlet entitled, Coping with depression, to be given to depressed patients. The therapeutic value of such bibliotherapy, as for example the written materials by Ellis, requires investigation. What is the nature of the psychological mechanisms that underlie the change that follows from reading such "therapeutic" material. Beck's work is filled with researchable questions. He is presently comparing drug treatment with "cognitive" therapy with depressives and is also examining cognitive factors in suicidal patients. He suggests that the thinking processes of depressives include thoughts and images of worthlessness, whereas those of anxious patients and phobics involve thoughts and images of personal danger. Research is required to further test the validity of this hypothesis.

Arnold Lazarus (Yale) has also discussed the role of the client's cognitions in his maladaptive response repertoire as has Dean Schuyler (National Institutes of Mental Health).

A number of other investigators are interested in the role of cognitive processes in the depressive syndrome, e.g., Cathy Garvey (SUNY at Buffalo) and M. Chavarria (Penn. State). Most recently two studies have been conducted that indicate the potential of a CBM therapy approach with depressives.

Fred Taylor (1974) found that a CBM approach along the lines outlined by Beck was significantly more effective than placebo and no treatment controls with a volunteer group of depressed Ss.

Bryan Shaw (Univ. Hosp., London, Ont.) conducted a controlled outcome study with depressed hospitalized patients evaluating a cognitive modification approach vs.a social skills behavior program a la Lewinson vs. a non-directive approach vs. a waiting list control group. The cognitive approach which identified and modified client's idiosyncratic maladaptive thoughts and ideation proved most effective. This study requires replication and extension.

Robert Sammons (Glenwood Springs, Colo.) used a systematic resensitization (not desensitization) procedure to treat depressed patients. He constructed a hierarchy of scenes of an activity which used to be reinforcing to the depressed client and then had the patient visualize a scene while relaxed. If he became uncomfortable or depressed he would signal the therapist to terminate the image. For example, the formerly reinforcing activity, such as shooting pool, was organized into a hierarchy and the depressed S visualized scenes from the hierarchy while relaxed and while given suggestions that he was feeling better, etc. The patient was then encouraged to engage in the activity in real life until the point when he lost interest and began to become depressed, at which time he should leave. He should engage in the activity only for as long as it was pleasant and emphasis was not put on duration. In this way, the systematic resensitization procedure changes the patient's cognitions about the target reinforcers and then systematically induces graded, in vivo exposure to those activities. Sammons has called the first phase "cognitive restructuring", the second phase, "behavioral reorientation". Sammons reports success with several case studies. The technique bears study. Perhaps in later sessions the imagery could be changed to incorporate cognitive coping procedures, namely, having the patient view himself starting to become depressed and then seeing himself coping with those feelings.

Jim Hodgson (Penn. State) is examining the cognitive components involved in a related problem of weight control. He is examining the role cognitions play at each phase of treatment and relating such cognitions to Schachter's work on stimulus dependency and obesity. Quite often depressive cognitions and elements of helplessness come into play in the Ss learning to exert self-control. Insofar as we, as therapists, can anticipate, subsume and incorporate into the treatment regimen our client's cognitions (viz., what they say to themselves and their images when they fail to exert self-control), will our treatments become that much more effective. What does a client say to himself (i.e., his attributions, self-statements, etc.) when he violates the therapeutic contract to control his eating? Mahoney (1975a) has studied

the role of the obese client's belief system in the control of eating. If you are interested in obesity be sure to see the Mahoney (1975b) article on methodological and theoretical problems in treating obesity.

Another target behavior that has received a considerable amount of attention and one that lends itself to a CBM approach is evaluation, or test-anxiety. This was highlighted some years ago when Mandler (1972) suggested that test-anxiety scales may "be an established though undiscovered method of measuring the self-instructional tendency of our subjects (p.406)". This observation has been empirically validated by Irwin Sarason (1975) and Jeri Wine (1971).

Irwin Sarason (Univ. Washington) has conducted a most successful research program on test anxiety, in which he has demonstrated that high test-anxious Ss thinking and attentional style differs from that of low test-anxious Ss. The relationship between self-preoccupation and anxiety has recently been discussed by Sarason (1975) in a NATO conference paper. Sarason (1973) has also demonstrated that exposing high test-anxious Ss to a cognitively coping model vs. a mastery model is more effective in facilitating performance on laboratory based measures.

Al Kazdin (Penn. State) has conducted one of the better sets of studies that have demonstrated the relative efficacy of coping vs. mastery procedures. He has explored the use of covert modeling in the reduction of avoidance behavior and in the production of assertive behavior. The literature is now replete with examples of how imagery can be used to control behavioral and physiological responses (e.g., See Singer, 1974, Meichenbaum, 1975d). A recent interesting article is by Yorkston et al. (1974), who use a verbal desensitization procedure to treat bronchial asthma. They state, "the patient's own thoughts are often an important factor in asthma. For example, some patients become uneasy when they think about their asthma or its precipitants (p.371)." One is reminded of Alfred Adler's quote, "in a word, I am convinced that a person's behavior springs from his ideas."

For those interested in covert modeling two related, potentially valuable areas to examine are the writings on the "work of worrying" (Marmor, 1958; Janis, 1958; Breznitz, 1971), and the work on mental rehearsal, as reviewed by Richardson (1967a,b).

Richard Bootzin (Northwestern) is examining the content of the thinking processes of insomniacs. What exactly differentiates the content and thinking style of insomniacs versus "normals" while they lie in bed? Interestingly, Sarbin (1972) has characterized such imagery rehearsal as "muted role taking".

Richard Suinn (Colorado State) has used such imagery rehearsal procedures to teach skiing skills. Another fascinating population to work with in terms of cognitions are athletes, especially gymnasts, figure skaters, etc. Have you ever asked a skater what goes through his mind before he goes on? I recall several reported anecdotes concerning athletes. For example, a high jumper reported that he would close his eyes right before the jump and would not begin his run until he saw himself successfully achieve the jump. Then he could begin his own jump matching his in vivo performance with the cognitive rehearsal. In contrast, a heavyweight lifter had to get angry, visualize all the pent up anger he could imagine. As he paced about, the anger mounted, peaked and he lifted. A female swimmer had to sing the popular tune of the day, using her vocalizations as a metronone. (See Martin (1972) for a discussion of the rhythmic role of internal speech.) A fascinating and relatively unexplored area is the role of cognitions in the acquisition of such motoric skills.

Imagery and self-instructional procedures can play a large role in the acquisition of skill. There is a need to examine how cognitions change with the acquisition of a set of motoric and behavioral skills.

Sherryl Goodman (Univ. Waterloo) is examining changes in private speech of children and adults as they develop proficiency at tasks. For those interested in this issue see articles by Gal'perin (1969), Kimble and Perlmutler (1970), Wozniak (1972), and Meichenbaum (1975e). The motor-skills literature may have much to offer CBM therapists.

But back to exam anxiety.

Jeri Wine (Wilfrid Laurier Univ., Waterloo) has developed a treatment program to alter the attentional and cognitive style as well as the study habits of high test-anxious Ss.

Frank Richardson (Univ. Texas) has developed a semi-automated self-study manual to teach self-instructional skills to high test-anxious students. The manual is written in a way that will make the Ss aware of negative, anxiety-engendering self-statements and their attentional style. This recognition is the occasion for the Ss to emit the incompatible thoughts and behavior that are modeled in the workbook. Homework assignments are also given. Included in the manual are such treatment techniques as symbolic modeling, vicarious desensitization, attentional training and self-instructional rehearsal. The self-study guide could be changed and applied to other clinical problems to supplement therapy. Perhaps some day psychological clinics will be stocked with manuals, modeling films, etc. to teach behavioral, cognitive and interpersonal skills.

John Lavigne (1974) and Royce Scrivner (1974), in two recent Ph.D. theses at Univ. of Texas, have also explored the use of CMB treatment with test anxious Ss. Other investigators with whom I have corresponded, and who are exploring the use of CBM procedures for treating test anxious Ss include: Maureen O'Hara (SUNY at Buffalo), Marion Jacobs (Univ. Calif., Irvine), Randi Finger (Univ. No. Carolina), Victor Bary (Temple Univ.), Michael Osarchuk (Adelphi Univ.).

Bill Norman (Duke Univ. Medical Center) and Ed Craighead (Penn. State) examined the efficacy of combining self-instructional training with systematic desensitization, and compared the combined treatment with an attention placebo and no treatment control group. Although all methods resulted in a decrement in behavioral, physiological and subjective anxiety, the combined package produced more decrements in subjective anxiety. Recently, Milardo (1975) reported that desensitization that employed coping imagery was more effective in reducing test anxiety than standardized desensitization.

Rhonda May (Univ. Kansas) is analyzing the relative components of CBM treatment package with college students. She is comparing the cognitive therapy of having Ss become aware of negative self-statements and how to change them to positive self-statements, with covert behavioral rehearsal and a combination of both. In addition, she is manipulating the set the Ss receive prior to treatment, namely technique vs. personal orientation.

James Thompson (El Paso, Texas) while at the Univ. of Arkansas conducted a Ph.D. thesis on the relative efficacy of desensitization, desensitization using coping imagery, "cognitive modification", and rational-emotive therapy (RET) with test anxious college students.
The cognitive modification included becoming aware of negative self-statements and rehearsing coping self-instructions while undergoing a variant of desensitization. The RET group was essentially the cognitive modification procedure but with desensitization elements omitted. (N.B. These conditions represent only one way to conduct cognitive modification and RET procedures.) The results were equivocal, in part due to the relatively low anxiety levels of the Ss, especially as compared to Ss in Meichenbaum's (1972) test anxiety study. Thompson provides an interesting and incisive analysis of the factors which may have contributed to the population differences at the Universities of Arkansas and Waterloo. The results indicate that the RET group tended to improve the most on all self-report measures of test anxiety and they responded most favorably to the group treatment format.
The research questions raised by Thompson bear careful reexamination. There is a need to compare different cognitive therapy procedures.
Presently James Thompson and his colleague Dr. Bryan are involved in developing a training program for couples using Rational Behavior Therapy. They are using "videotaped presentations, role-playing and homework assignments in an effort to begin the task of training people in how to modify their cognitions and thereby their self-defeating inefficient behavior". The applicability of cognitive-behavior modification procedures for treating couples is most promising.

Joel Goldstein (Univ. Cinncinati) is examining the use of systematic, rational restructuring (a la Goldfried et al., 1974) vs. desensitization with specific performance-anxiety among musical performance majors.

Monroe Bruch (Bradley Univ.) and his colleagues have developed a cognitive modeling and rehearsal treatment procedure for reducing test-anxiety. The CBM treatment package involved exposing the irrational nature of

test-anxious Ss' worries by discussing the self defeating consequences of such thoughts, followed by the therapist's verbal modeling of thought-stoppage *procedures and self-instructions to attend to relevant study and test-taking* behaviors. The second treatment phase involved therapist modeling of explicit test-taking skills, in which the model verbalized principles for solving familiar types of test items. Finally, a behavioral phase was conducted, during which Ss were given intensive practice with tests by having them practice the modeled test-taking skills on sample classroom tests and self-prepared tests. A copy of the therapist manual is available upon request from Bruch. The CBM procedure was compared with desensitization and waiting test control. Only CBM resulted in significant decrease in reported anxiety after treatment. However, at followup no between treatment group differences were evident. As Bruch indicates, there is a need to examine the effects of CBM training on the Ss attentional and problem-solving abilities when answering test questions. The need to conduct in vivo and/or lab-simulated observational studies of Ss who have CBM is apparent. It would be interesting to see the effects of the combined treatment package of Richardson's study manual, Bruch's rehearsal training, and Wine's attentional training and study skills approach.

The CBM approach for the treatment of test anxiety is designed to make clients aware of their negative self-statements (i.e., thoughts and feelings), their disposition to become self-preoccupied in evaluative situations. This recognition is to become the cue to emit task-relevant responses, such as relaxation, self-instructions and images, and cognitive strategies that would lead to self-control. Two observations are that generalization is built into the treatment package, for the client's own symptoms are to be the signals to cope, and that it is not as if the clients are actually consciously talking to themselves prior to therapy. Rather, as with most overlearned skills, the clients' thinking processes are habitual in nature, with the maladaptive behavioral response occurring without premeditation. The goal of CBM is to have the client "deautomatize" the response act and entertain the notion that part of his problem is what he is saying to himself. This approach is illustrated in the work with other clinical populations, especially with adult hospitalized schizophrenics.

Meichenbaum and Cameron (1973b) conducted a self-instructional training program with schizophrenics. We hypothesized that a major contributor to schizophrenics' performance deficit (e.g., on an attentional vigilance task) was that they were (1) not noting when their attention was waning and performance deteriorating, (2) the schizophrenics failed to spontaneously and appropriately emit cognitive and behavioral strategies that would facilitate performance, and (3) if they were interrupted from the task by externally- and/or internally-generated cues, they did not produce the cognitive coping techniques required to get back on target. Thus, the focus of training was to teach schizophrenics how to emit task-relevant cognitive strategies. The initial results were sufficiently encouraging to give rise to a number of investigations which are now underway: James Machum (N.J. Greystone Park Psychiatric Hospital), Andre Soulieres (Montreal, Quebec), Ronald Margolis (Bowling Green State Univ.), Robert Gresen (Milwaukee, Wisconsin).

Jerome Siegel and George Spivack (Hahnemann Hospital, Phil.) developed an interesting, related approach. They found that schizophrenics, as well as other clinical populations are deficient in problem-solving ability as assessed by the Means-Ends problem-solving task (MEPS). This test requires Ss to provide a middle to a problem-solving situation in which the beginning and ends are provided. Siegel and Spivack (1974) have developed a promising training program to teach such problem-solving skills. (See the scripts they have developed.) The approach is similar to the D'Zurilla and Goldfried (1971) article on psychotherapy as problem-solving skill and reminiscent of the training manuals used by Goldstein (1974) with schizophrenics and Sarason and Glanzer (1971) with delinquents. Such approaches could readily include CBM elements. A problem-solving training approach is receiving a great deal of attention as clients are taught to specify problems, generate alternative solutions, tentatively select a solution, and test and verify that solution (e.g., see Goldsmith & McFall, 1975). Such different populations as preschoolers (Spivack & Shure, 1974), impulsive school children (Meichenbaum & Goodman, 1971), adult neurotics (McGuire & Sifneos, 1970), predelinquent youths and their parents (Kifer et al. 1974) and drug addicts have been given such training. (See Goldfried and Goldfried (1975) for a review of this work.) It seems like a promising approach which deserves a great deal of further research.

A brief description of some other investigators, who have worked on a problem-solving treatment approach, may be of help.

Heinz Heckhausen (Bochum Univ., Bochum, W. Germany) has reported a thesis done by Hanel (1974) on fourth graders who were selected for a marked fear of failure, in addition to poor academic records. Hanel was able to successfully teach these children to talk to themselves differently, to problem solve, and change their motivational style and academic performance. The E cognitively modeled for the children how to set standards, plan actions, calculate effort output, monitor performance, evaluate performance outcome, weigh causal attributions and administer self-reward. Then the students took turns in performing tasks while emitting similar cognitions (initially aloud and then covertly) -- a procedure that was used by Meichenbaum and Goodman (1971) with impulsive children.

The Hanel study needs replication. It is a most important study for it suggests that a child's cognitive style can be significantly altered. One wonders if such an approach could be applied to individuals who have an "external" locus of control orientation. If one thinks of the "externals'" cognitive style as a reflection of an internal dialogue, then a number of interesting researchable questions are offered. Thus, such psychological terms as attributions, appraisals, self-reinforcement, cognitive style, self-concept, etc., are viewed as descriptive, or theoretical summary terms (chapter headings) to explain the Ss' thoughts, self-statements, images and internal dialogues. Each one of these terms seems to capture only one aspect of that rich internal dialogue. When viewed thus, one can use the technology of cognitive-behavior therapy to influence and change that dialogue.

Bonnie Camp (Univ. Colorado Med. School, Denver) has begun a research program to examine the role of verbal control in Kindergarten through Grade 2 boys who manifest problems of aggressiveness. In addition, she is undertaking a problem-solving-training program with these children. Camp is developing a curriculum to teach self-control, and the use of cognitive strategies, on a number of tasks, which vary from simple problem-solving puzzles to interpersonal situations. Her therapists are adult volunteers from the community who work with the children on an individual basis over a number of weeks. Camp has demonstrated the value of such a tutorial training program with children who have reading problems. Many schools have volunteer programs. The question is, could the volunteers be taught how to explicitly teach thinking, the heuristic principles, the cognitive strategies to be employed to do a task or to relate interpersonally?

Dale Ellis (Winston Salem, N. Carolina) is using cognitive modeling and role playing procedures with impulsive aggressive children.

Marlene Schneider (SUNY at Stoney Brook) developed an interesting procedure to foster self-control in behavior problem children. As part of her classroom procedure she read the children a story about a turtle who went into his shell when he felt he was about to lose control. Like the turtle, the children practiced "going into one's shell", but while there they rehearsed relaxing, self-instructional and problem-solving skills in order to exert self-control. Although one may not like the picture of going into a shell, the notion of using children's stories and images as ways of teaching cognitive and self-control techniques is most exciting. Indeed, there are a number of investigators who are using imagery-based procedures with children to foster self-control, and influence the play behaviors of lower class children (e.g., Freyberg, 1973; Saltz, 1974; Mischel, 1974).

A CBM approach which uses cognitive modeling and overt and covert rehearsal procedures has received much research attention. (See Meichenbaum (1975c) for a more detailed description of how such training can be conducted, especially with hyperactive children.) In order to teach the child to think before he acts, to bring his behavior under his own verbal control, an attempt is made to interrupt the behavioral sequence. Rather than being given over to the impression of the task an attempt is made to "linguify" more and more situations for the child.

Virginia Douglas (McGill Univ., Montreal) and her colleagues (Penny Parry) are actively examining the clinical potential of the CBM approach with hyperactive children alone and in combination with medication.

Inge Wagner (Bochum Univ., Bochum, W. Germany) and her students have a very active research program underway on the nature and modification of impulsive children. She has successfully applied a self-instructional training program to children and has recently developed two short films on teaching children self-instructions to be shown to children and teachers.

Alfred Finch (Richmond, Virginia) has examined the use of a response cost system, and is presently examining the use of a self instructional training procedure with impulsive children.

Linda Rhyne (Univ. Illinois, Champaign) is examining application of self-instructional training with impulsive children, but she is focusing on generalization tasks by using more classroom-related tasks and by using peers and teachers as models. Such an extension from the initial Meichenbaum and Goodman (1971) self-instructional treatment study is sorely needed.

Elliot Rutler (Univ. Dayton) has demonstrated that a useful training procedure to alter an impulsive cognitive style is the use of a tactile discrimination-training procedure. The child is presented with a standard figure and through a curtain he must select one matching the standard. Such a training task lends itself nicely to a cognitive modeling and self-instructional training procedure.

James Leon (Goldsboro, No. Carolina) is applying self-instructional training procedures to mildly retarded populations. Such a treatment approach is most fascinating in light of Luria's speculations about a linguistic deficiency in retarded populations. One could view deficit performance in retardates as well as other clinical populations as a "cognitive strategies deficiency syndrome" (Meichenbaum 1975f) in which the S fails to spontaneously produce appropriate cognitive strategists. CBM may be helpful in overcoming such deficits.

Joseph Goodman (1973) has demonstrated the value of a cognitive strategy-training procedure to alter the attentional style or looking behavior of impulsive children as measured by the children's eye movements while doing the Matching Familiar Figures Test.

William Higa (Univ. Hawaii at Hilo) has examined the components of the self-instructional training package. He has compared a self directed with an external directed training program with Head Start five year olds. The children were divided on their competence with standard English.

Eric Mauer (Cornell Univ.) has explored the usefulness of CBM with parents conducting training. He is also comparing a self-instruction program with a supportive empathic (Truax-based) program with kindergarteners. He employed a simple pencil drawing copying task as a means of providing cognitive modeling and self-instructional training. The work with parents raises an important research issue. Most of the research on parent-child interactions, the dyadic analysis literature, has limited its focus to observable behavioral interactions and has not examined the accompanying internal dialogues of the participants. What does the parent say to himself when presented with a child's misbehavior? (Perhaps, "Who does he (the child) think he is; I'm the parent; he can't do that" "If I let him get away with this then what," etc., etc.). Recall the Novaco study on aggression! What are the appraisals, attributions, self-statements of parents who have engaged in child abuse? If such cognitive processes are important then there are important implications for how we conduct behavior therapy with parents. How would one alter Patterson's (1971) treatment approach with parents to explicitly include cognitions? Or, for example, a treatment approach such as Gordon's (1971) parent-effectiveness training (PET) could be viewed as teaching a parent (1) to monitor his behavior and to become a self-observer (2) when he notices that he is getting upset with his child the parent is to talk to himself, and not to immediately respond. The parent has to decide whether the child's misbehavior is an example that the "child owns the problem" or the "parent owns the problem" or "no problem". How he labels or what the parent says to himself about the child's misbehavior influences the set of verbal and behavioral responses the parent will emit. I could go on in this analysis, but it highlights the point that the therapist must be sensitive to the role cognitions play at each phase of the problem and as part of the treatment regimen. It is suggested that as we include such cognitions into our treatment regimens our treatments will become more effective.

A similar CBM dyadic analysis could be applied to couples having marital discord. If the couple's cognitions play a role in contributing to the conflict then the way in which the behavior therapist uses "behavioral contract therapy" could be altered.

Recently, CBM procedures have been applied to academic problems. An area that has received some attention is *reading comprehension*.

Jim Bommarito (Illinois State) and Don Meichenbaum (Univ. Waterloo) have developed a self-instructional training approach for school children who have problems in comprehending reading materials. The school children were 7th and 8th graders. They had basic decoding skills within their repertoires, but they failed to spontaneously and appropriately produce the organizational and cognitive strategies that would facilitate reading comprenension. Consistent with the studies reviewed above, the investigator confronted by a response deficit asks: (1) What is the S saying to himself that interferes with performance (i.e., the anxiety-engendering self-statements, etc.), and (2) What is the S failing to say to himself which if present and then followed would lead to adequate performance. (Meichenbaum (1975f) has described how a cognitive-functional assessment approach can be employed to study the nature of a performance deficit. See a recent paper by Wozniak (1975) that describes how Soviet psychologists assess performance deficits.) In order to overcome reading deficiency, the children were given training on a number of tasks where the E could model and then the child could rehearse cognitive strategies.

Robert Wozniak and Peg Muechterlein (Univ. Minnesota) have also demonstrated the value of a self-instructional approach to improve reading. By means of a verbally self-guiding, looking and listening program they were able to improve reading improvement in second graders. Wozniak and Bryan Egeland (Univ. Minnesota) are now involved in a curriculum development program for learning disability kindergartners. Their curriculum lends itself nicely to a cognitive modeling procedure.

Geraldine Schwartz (John Abbott College, Quebec) has successfully developed a tutorial reading program with college students and older children teaching younger children who have reading problems. Such a tutorial program could be used to teach cognitive skills, as well as include reinforcement manipulations. Schwartz calls her tutors contingency managers since they develop reading "contracts" with the children and consequate reading behavior. She reports the generalization of reading skills to other academic areas.

Don Davis (Memphis State Univ.) is also examining the use of CBM with children who have reading problems. He is using a self-instructional-training approach to teach children to use contextual cues and to develop word-attack skills. Included in the treatment package are self-instructions to pay attention, self-reward, and coping self-statements.

Another academic problem being researched is creativity and problem-solving skills. Meichenbaum (1975g), Dave Henshaw and Roy Cameron (Univ. Waterloo) are examining these issues. The underlying question is how one teaches thinking. Many years ago, influenced by "faculty" psychology, educators entertained the notion that if children learned Latin this would develop skills which would transfer to other areas. Indeed, some educators still believe in this! One principal has the entire school begin each morning with 10 minutes of arithmetic drill problems in order to "pick up mental tonus", "massage the brain", etc. Perhaps, there is merit in the idea of teaching cognitive skills, a "learning how to learn set", but the tasks (Latin and arithmetic) are not very useful for fostering transfer. Research is presently underway to develop cognitive strategies, heuristic skills that can be applied across academic and interpersonal situations.

Douglas Denny (Univ. Kansas) has indicated the potential of a cognitive modeling vs. exemplary modeling in altering children's constraint-seeking questions and enhancing their problem-solving efficiency. Exemplary models merely modeled specific constraint-seeking questions, whereas cognitive models verbalized the strategy for formulating constraint-seeking questions, etc. Research is needed to determine how one can best teach such rule-generated behavior. (See an article by Zimmerman and Rosenthal (1974) on how such rule modeling may be employed.) Cameron and Meichenbaum are trying to teach children by means of CBM how to generate rules or cognitive strategies or "metarule" learning. We may be able to use cognitive modeling and self-instructional techniques to teach thinking.

Finally, there is one last tradition in how we view and treat our client's cognitions, namely, that deriving from a behavioral orientation. The notion that cognitions can be treated in the same manner as overt behaviors (i.e., a continuity assumption) underlies many behavior therapy paradigms (e.g., Cautela's covert sensitization, Wolpe's anxiety-relief conditioning, etc.). Only recently has this very basic assumption been tested and as a result, challenged, by having S manipulate contingencies.

Anyone doing work on covert sensitization or variants thereof should examine Michael Mahoney's (1974) fine review of that literature. On both empirical (outcome) and theoretical grounds he seriously questions Cautela's procedures. Mahoney points out the important role of the client's belief system in the change process. He is presently involved in research on the nature of beliefs. (See Daryl Bem's (1970) book on beliefs as an introduction to this very important topic.)

WHO

A number of other investigators have also examined the role of contingencies in behavior therapy procedures.

Joan Boutilier (Queen's Univ., Kingston, Ont.), for example, has examined the effects of covert conditioning procedures in modifying phobic behavior. She found that the contingent application of the covert events was not important for treatment outcome. An increasing number of studies reviewed by Mahoney (1974) and Meichenbaum (1974c) have seriously questioned the empirical and theoretical bases of a covert-conditioning paradigm.

David Rimm (Southern Illinois) is an active investigator in employing thought stoppage to control cognitions.

David Fisher (Sausalito, Calif.) has reported the successful application of an anxiety-relief procedure, that is, the pairing of the onset of shock with anxiety-inducing self-statements and shock offset with positive, coping self-statements. Fisher reports that the treatment is enhanced if the level of shock increases as the patient emits anxiety-inducing self-statements. From trial to trial, the intensity of shock increases at variable intervals. When the patient finds the shock too uncomfortable, he switches to positive self-instructions and relaxation. Fisher also comments on the need for the client to emit the self-statements with feeling, by rehearsing the self-statements prior to the introduction of shock. Moreover, care must be taken that the client does not see the introduction of the shock as an instance for a "battle of wills" or "demonstration of courage".

However, questions remain concerning the mechanisms involved in such anxiety-relief procedures.

Much research is needed to determine the adequacy of a learning theory approach to cognitions. The complexity of the processes involved is illustrated by some data we have that phobic clients who had been treated by desensitization and who spontaneously and, in an unsolicited fashion, reported to their therapist that they had dreamt of using the coping techniques to handle the phobic objects, manifested the most significant behavioral and affective change of any of the desensitized Ss. Bergin (1970) has also commented on the role of dreams following desensitization. Given the recent work on presleep experiences being incorporated into dreams, one wonders how our client's dreams could be therapeutically employed. What would happen if modeling films were shown prior to sleep? Moreover, where do such cognitive processes fit into a "learning" framework of change? An illustration of the convergence of dynamic and behavioral approaches is given by Feather and Rhoads (1972), who desensitize patients to the fantasies underlying their phobias. Such fantasies are elicited by means of asking the clients what could be the worst things that could happen when confronting the phobic situations.

This is what I meant at the outset when I suggested that as behavior therapists become involved with their client's cognitions a dialogue may begin between therapists of different theoretical persuasions.

BY WAY OF CONCLUSION

This initial newsletter has gotten completely out of hand. Its length indicates the burgeoning literature in the cognitive-behavior modification area. As mentioned previously, the purpose of this newsletter is to engender communication among researchers and practitioners in order that more research will be conducted. The reader will find many stimulating ideas in several recent books:

Michael Mahoney. Cognitive and behavior modification. Cambridge, Mass.: Ballingen, 1974.

Jerome L. Singer. Imagery and daydream methods in psychotherapy and behavior modification. New York: Academic Press, 1974.

Jerome Frank. Persuasion and healing. Baltimore: Johns Hopkins Press, 1961.

Arthur Staats. Social behaviorism. Homewood, Ill.: Dorsey, 1975.

Jay Haley. Uncommon therapy: The psychiatric techniques of Milton H. Erickson. New York: Ballantine Books, 1973.

Gail Parker. Mind care in New England: From Civil War to WWI. Univ. Press of New England, Hanover, New Hampshire. Book describes the movement to achieve health, happiness and success in life through "right thinking". In this light see article by Miller (1955) on Norman Vincent Peale approach.

For a noteworthy early presentation (1905) of the potential role of rational psychotherapy see Paul Dubois' book The psychic treatment of nervous disorders: The psychoneurosis and their moral treatment.

Victor Raimy. Misunderstanding of the self: Cognitive psychotherapy and the misconception hypothesis. San Franscisco: Josey-Bass, 1975. This recent book further contributes to a Zeitgeist of the important role of cognitive processes in facilitating change. Raimy focuses on the patients' misconceptions, faulty beliefs, ideas or perceptions they have about themselves. The behavior modification technology could be nicely wedded to the clinical concerns espoused by Raimy, as well as other writers reviewed in this newsletter.

As we collect more data about our clients' cognitions our own internal dialogues will be dramatically altered.

Addenda

Don Robertson and Stewart Keeley (Dept. Psych., Bowling Green State, Bowling Green, Ohio, 43403) investigated the efficacy of modeling procedures to train mediational problem solving skills in impulsive first and second grade children. They provided three weeks of individualized training in the classroom. One academic task was used each session. In addition, self-instruction (S-I) cards were used as a guideline for E's and S's verbalizations during problem solving. (See Robertson and Keeley, 1974 APA paper, for description of training format.) The S-I training was supplemented by a token reinforcement regimen, which was eventually faded. The training was found to be effective in reducing impulsive errors (Matching Familiar Figures test, Porteus Mazes) and improving academic achievement (Wide Range Achievement Test, WRAT). Interestingly, even though the observed treatment effects on impulsive errors were substantial, there was no accompanying change in latency, indicating that problem solving strategies may be modified without large increases in latency. Although the training contributed to some academic improvement, no significant change in classroom behavior was evident. In order to foster such behavioral generalization it may be necessary to not only teach mediational skills, but also make explicit to the child which maladaptive behaviors in his repertoire are to cue the coping skills.

Arthur Robin, Sandi Armel, and Dan O'Leary (SUNY at Stoney Brook) have recently conducted a self-instruction study, "The effects of self-instruction on writing deficiencies" which appeared in Behavior Therapy, 1975, 6, 178-187. They compared the efficacy of self-instructional (SI) and direct training (i.e., feedback and social reinforcement) in teaching printing to school

children. Although SI training proved superior to direct training, minimal generalization was evident for both training groups. The practical limitations of employing self-instructional training were highlighted. The authors also highlight the differences in using self-instruction for the training of new responses (e.g., printing) versus responses that are already within the client's repertoire.

This study requires further examination and provides an opportunity to make several brief comments about the SI training format. First, the goal of SI training is to teach "thinking", or to bring the child's behavior under his own verbal control by means of teaching cognitive strategies. A cognitive strategy, to paraphrase Gagne & Briggs (1974), is a skill by means of which the learner manages his own thinking behavior, guiding the internal processes involved in defining and solving novel problems. Thus, cognitive strategies are similar to Skinner's self-management behaviors.

How should one teach such cognitive strategies? At present SI training has included several different formats. For example, (1) the E cognitively models a package of self-statements and S rehearses them, initially aloud, then covertly. (2) Somewhat different is a "copy-cat" format, with the child repeating immediately each modeled self-statements, (3) and again different is the instructor's use of a Socratic dialogue format, having the child help generate and employ self-statements. The E may ask himself questions about the task and pause for the child to answer. In turn, the E and S reverse roles. Research is needed on the different ways to conduct SI training. However, the goal of training is to fade the child's verbalizations, such that SI, at the end of training does not look different from direct training.

I mention this because children in the SI group in the Robin et al. study were still encouraged to talk aloud at the end of 20 training sessions. With the development of proficiency, the accompanying internal dialogue should drop out of the repertoire. Sherryl Goodman (1975) found that children who perform puzzles efficiently emit few self-verbalizations and only children who perform on a trial and error basis emit self-guiding speech. Thus, the functional value of SI training is dependent on the degree of skill or proficiency as well as on the content of the self-statements. Such self-statements as "what is it I have to do?" or "What plan shall I follow?" or "What reminders should I give myself to do this task?" may facilitate generalization. Note that the answers to these questions, the cognitive and behavioral skills that contribute to the response repertoire, must be developed in the child. (For example, see the skills program being developed by Wozniak and Egeland.) The question is whether such skills training can be enhanced by use of an SI training format. As Robin et al. indicate, "letter copying requires a series of skills, including discrimination, motor control, and spatial-representational skills." The quesiton remains whether SI training could facilitate the acquisition of such skills.

One final comment on the practicality of SI training. We have found that one can translate each of the major SI questions and statements into pictures with cartoon-like captions (that is, each picture becomes a discriminative stimulus for a set of self-statements). Imagine taking these pictures and having them reduced in size to that of a postage stamp. The child, when doing a task such as copying letters or Porteus Maze, could then stick on a stamp at appropriate points in a task, which would be reminders to self-instruct. The use of the stamps could then be faded. Once again, the goal is to foster self-produced verbalizations (i.e., cognitive strategies). Much research is needed to determine how best to teach "thinking", to foster self-control.

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ADDRESSES

Ted Barber, Research Dept., Medfield Foundation, Medfield, Ma. 02042.
Victor Bary, Brittany Spring M-13, Levittown, Pennsylvania 19057.
Aaron Beck, 429 Stauffer Bldg., Philadelphia General Hospital, 700 Civic Centre Blvd., Philadelphia, Pa., 19104.
Jim Bommarito, Dept. of Special Education, Illinois State Univ., Fairchild Hall, Normal, Illinois.
Richard Bootzin, Dept. of Psych., Northwestern Univ., Evanston, Illinois.
Joan Boutilier, Dept. of Psychology, Queen's University, Kingston, Ont.
Monroe Bruch, Bradley Counseling Centre, Bradley University, Peoria, Illinois 61606.
Elliot Butler, Dept. of Psych., University of Dayton, Dayton, Ohio.
Roy Cameron, Dept. of Psych., University of Waterloo, Waterloo, Ont. N2L 3G1.
Bonnie Camp, University of Colorado Medical Centre, 4200 East Ninth Ave., Denver, Colorado 80220.
M.C. Chavarria, Div. of Indiv. & Family Studies, Penn. State Univ., S-106 Human Development, University Park, Pennsylvania 16802.
Ed. Craighead, Dept. of Psych., Penn State Univ., University Park, Pa.
Jon Davis, Memphis State Univ., P.O. Box 91221, Memphis, Tennessee 38152.
Douglas Denney, Dept. of Psych., Univ. of Kansas, Lawrence, Kansas 66045.
Beverly Dodge, Apt. #214, 8036 Purnell, Austin, Texas 78753.
Virginia Douglas, Dept. of Psych., McGill Univ., Montreal, Quebec.
Bryan Egeland, Instit. of Child Development, Univ. of Minnesota, Minneapolis, Minnesota.
Albert Ellis, Institute for Rational Psychotherapy, 45 East 65th St., New York, N.Y. 10021.
Dale Ellis, Child Guidance Clinic, 1200 Glade St., Winston-Salem, North Carolina.
Alfred Finch, 1502 Lockwood Dr., Richmond, Virginia.
Randi Finger, 412 Northampton Plaza, Chapel Hill, North Carolina 27514.
David Fisher, Behavior Therapy Institute, 300 Valley St., Sausalito, Calif. 94965.
Iris Fodor, School of Education, New York Univ., Washington Square, New York, N.Y. 10003.
Donald Freeman, Dept. of Psychology, Memorial University, St. John's, Newfoundland.
William Fremouw, Dept. of Psychology, University of Massachusetts, Amherst, Massachusetts 01002.
Cathy Garvey, Dept. of Psychology, SUNY at Buffalo, 4230 Ridge Lea Road, Buffalo, New York 14226.
Michael Girodo, Faculty of Psych., University of Ottawa, 1245 Kilborn Avenue, Ottawa 8, Ontario.
Marvin Goldfried, Dept. of Psychology, SUNY at Stony Brook, Stony Brook, New York.
Joel Goldstein, Dept. of Psych., Univ. of Cincinnati, Cincinnati, Ohio 45221.
Sherryl Goodman, Dept. of Psychology, University of Waterloo, Waterloo, Ontario, N2L 3G1.
John Gottman, Dept. of Psychology, Indiana University, Bloomington, Indiana 47401.
Robert Gresen, 2720 North Frederick Ave., Apt. #130, Milwaukee, Wisconsin 53211.
Heinz Heckhausen, Psychologisches Institut, Ruhr-Universitat, 463 Bochum, West Germany.
Dave Henshaw, Dept. of Psych., University of Waterloo, Waterloo, Ontario, N2L 3G1.
William Higa, Dept. of Psychology, University of Hawaii at Hilo, Hilo, Hawaii.
Jim Hodgson, Pennsylvania State Univ., Human Development Bldg., University Park, Pennsylvania 16802.
Marion Jacobs, Counseling Dept., University of California at Irvine, Irvine, California, 92664.
Irving Janis, Dept. of Psych., Yale Univ., New Haven, Connecticut.
Allan Kazdin, Dept. of Psych., Penn. State Univ., University Park, Pennsylvania.
Fred Kanfer, Dept. of Psych., Univ. of Illinois, Champaign, Illinois.
William Knaus, Institute of Rational Living, Inc., 45 East 65th Street, New York, N.Y. 10021.
Arnold Lazarus, Dept. of Psychology, Yale Univ., 333 Cedar St., New Haven, Connecticut 06511.

James Leon, Dept. of Human Resources, O'Berry Center, P.O. Box 247, Goldsboro, North Carolina.
John Lick, Dept. of Psychology, SUNY at Buffalo, Buffalo, New York.
Marsha Linehan, Dept. of Psychology, Catholic Univ. of America, Washington, D.C., 20064.
James Machum, Dept. of Psychology, Section II, Greystone Park Psychiatric Hospital, Greystone Park, New Jersey 07950.
Michael Mahoney, Dept. of Psychology, Penn. State Univ., University Park, Pennsylvania.
Ronald Margolis, Dept. of Psychology, Bowling Green State University, Bowling Green, Ohio 43403.
Maxie Maultsby, Medical Center, Univ. of Kentucky, Lexington, Kentucky 40506.
Eric Mauer, Dept. of Human Develop. & Family Studies, MVR Hall, Cornell Univ., Ithaca, New York 14850.
Rhonda May, Apt. #403, 2323 North Woodlawn, Wichita, Kansas 67220.
Donald Meichenbaum, Dept. of Psychology, Univ. of Waterloo, Waterloo, Ontario, N2L 3G1.
Joop Meijers, Psychologisch Laboratorium, Vondelstraat 103, Amsterdam W, Holland.
Barbara Melamed, Dept. of Psych., Case Western Reserve Univ., Cleveland, Ohio 44106.
Bill Norman, Dept. of Psych., Duke University Medical Center, Durham, North Carolina.
Ray Novaco, Program of Social Ecology, Univ. of California at Irvine, Irvine, California 92664.
Maureen O'Hara, Dept. of Psych., SUNY at Buffalo, 4230 Ridge Lea Rd., Buffalo, N.Y. 14226.
Michael Osarchuk, Institute for Advanced Psychological Study, Adelphi Univ., Garden City, New York 11530.
Ernest Poser, Dept. of Psych., McGill Univ., Montreal, Quebec, Canada.
John Reeves, Counseling & Psychology Center, Dalhousie Univ., Halifax, Nova Scotia, Canada.
Lynda Rhyne, Dept. of Psych., Univ. of Illinois, Champaign, Illinois 61820.
Frank Richardson, Dept. of Educational Psych., University of Texas, C. of Education, Austin, Texas, 78712.
David Rimm, Dept. of Psych., Southern Illinois Univ., Carbondale, Illinois 62901.
Robert Sammons, Colorado West Regional Mental Health Center, P.O. Box 955, Glenwood Spring, Colorado 81601.
Irwin Sarason, Dept. of Psych., Univ. of Washington, Seattle, Washington 98105.
Marlene Schneider, Point of Woods School, SUNY at Stony Brook, Stony Brook, N.Y. 11790.
Dean Schuyler, NIMH CRB 10-C-24, 5600 Fishers Lane, Rockville, Maryland 20852.
Geraldine Schwartz, John Abbott College, P.O. Box 2000, Ste Anne de Quebec, Canada.
Bryan Shaw, University Hospital, 339 Windermere Rd., London, Ontario, N6G 2K3.
Phyllis Shaw, Psychological Treatment Research Unit, The Warneford Hospital, Oxford, England, OX3 7JX.
Joseph Sheare, Dept. of Special Education, Pennsylvania State Univ., College of Education, Cedar Bldg., University Park, Pa. 16802.
Jerome Siegel, Hahnemann Mental Health Center, 314 N. Broad Street, Philadelphia, Pa. 19102.
Andre Soulieres, 455, Sherbrooke O., Apt. #1001, Montreal, Quebec.
Pat Spector-Jaborowski, Dept. Behav. Studies, 8001 Natural Bridge Road, St. Louis, Mo. 63121.
George Spivack, Hahnemann Mental Health Center, 314 N. Broad Street, Philadelphia, Pa. 19102.
Steve Stein, Dept. of Psych., Univ. of Ottawa, 1245 Kilborn, Ottawa, Ontario, K1H 6K9.
Richard Suinn, Psychology Dept., Colorado State Univ., Ft. Collins, Co. 80521.
James Thompson, William Beaumont Army Medical Center, Dept. of Psychology, El Paso, Texas 79920.
Geoffrey Thorpe, Dept. Clinical Psych., Birch Hall Hospital, Rochdale, Lancashire, England, OL12 9QB.
Dennis Turk, University of Waterloo, Dept. of Psych., Waterloo, Ontario, N2L 3G1.
David Vernon, School of Medicine, Univ. of Missouri, TD3-W Medical Center, Columbia, Missouri 65201.
Inge Wagner, Psychologisches Institut, Ruhr-Universitat Bochum, 463 Bochum, Bochum, West Germany.

Jeri Wine, Director of Counseling Services, Wilfrid Laurier University, Waterloo, Ontario.
Janet Wolfe, Institute for Advanced Study in Rational Psychotherapy, 45 East 65th St., New York, N.Y. 10021.
Douglas Wood, Apt. #228, 80 Pearson Ave., Aylmer, Quebec, J9H 4K3.
Robert Wozniak, Institute of Child Development, University of Minnesota, Minneapolis, Minnesota.
Geoffrey Yager, The University of North Dakota, Dept. of Counselling & Guidance, Grand Forks, North Dakota 58201.
Manuel Zane, 130 Havilands Lane, White Plains, New York 10605.

COGNITIVE-BEHAVIOR MODIFICATION NEWSLETTER

Editor: Donald Meichenbaum
Technical Editor: Myles Genest

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Address all correspondance to Donald Meichenbaum
Psychology Department
University of Waterloo
WATERLOO, Ontario
Canada
N2L 3G1

Printed by Graphic Services, University of Waterloo.